

WAVELET ANALYSIS OF SIGNALS TO DETERMINE
CHARACTERISTICS OF ANOMALIES IN A WIRE

5 ABSTRACT OF THE DISCLOSURE

In one embodiment, a method for wavelet analysis of one or more signals to determine one or more characteristics of one or more anomalies in a wire includes receiving a first signal from a detector that has scanned a magnetic field from a wire including an anomaly. The first signal corresponds to a second signal used to generate the magnetic field. The method includes calculating a wavelet analysis result from a wavelet analysis of the first signal. The wavelet analysis result corresponds to the second signal. The method includes accessing a library of one or more reference wavelet analysis results that each correspond to one or more known anomalies having one or more known characteristics and comparing the wavelet analysis result with one or more reference wavelet analysis results. If the wavelet analysis result corresponds to one or more particular reference wavelet analysis results, it is indicated that the anomaly in the wire has one or more particular known characteristics of one or more particular known anomalies corresponding to the one or more particular reference wavelet analysis results. If the wavelet analysis result of the TDR signal does not correspond to one or more reference wavelet analysis results, it is indicated that the anomaly in the wire lacks one or more known characteristics of one or more known anomalies corresponding to one or more reference wavelet analysis results in the library.